A process for the wet chemical treatment of semiconductor wafers with treatment liquids in baths, comprising the steps of

firstly treating the semiconductor wafers in a bath with an aqueous HF solution only containing HF and optionally HCl and optionally a surfactant;

then treating the semiconductor wafers in a bath with an aqueous O_3 solution only containing O_3 and optionally HF; and

then treating the semiconductor wafers in a bath with an aqueous HCl solution only containing HCl and optionally O_3;

whereby these treatment steps form a treatment sequence B_2, which avoids rinsing with water or another treatment liquid and the addition of fresh water or other liquids to the treatment baths.

11.   (Twice Amended) A process for the wet chemical treatment of semiconductor wafers with treatment liquids in

baths, comprising the steps of

firstly treating the semiconductor wafers in a bath with an aqueous HF solution only containing HF and optionally HCl and optionally a surfactant;

then treating the semiconductor wafers in a bath with an aqueous O_3 solution only containing O_3 and optionally HF; and

then treating the semiconductor wafers in a bath with an aqueous HCl solution only containing HCl and optionally O_3 with exposure to megasonic waves,

whereby these treatment steps form a treatment sequence B_2, which avoids rinsing with water or another treatment liquid and the addition of fresh water or other liquids to the treatment baths.